REMARKS

Claim 14 is rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 14, line 2, a "microbe" is not considered to be "animal manure." Applicant has amended the claim accordingly.

Claims 1-3, 6, 11, 11-13, 16, 17, and 20-23 are rejected under 35 USC 102 (b) as being anticipated by JP7-57.

As to claims 1, 16, 17, 20-23, JP7-57, discloses a method of applying a soil stabilizer PAM ("polyacrylamide" of para. 0005 of abstract in English), comprising adding a soil stabilizer to a solid carrier (for example, para 0011 of translation in English with carrier being "bentonite") with a diameter in excess of 1 mm ("22mm-4cm" "constitution" section of translation in English) that would have mineral elements; applying the solid carrier to the soil (for example, para. 0013 of abstract in English); releasing the soil stabilizer out the solid carrier into the soil (inherent when watered).

Amended claim 1 requires that the soil stabilizer is released out of the solid carrier into the soil wherein the application rates of the solid carrier to the soil is based on the desired amount of the soil stabilizer to be metered to the soil.

As shown in the attached comparison charts, JP7-57 relates to the field of tree planting. The product is better than a poly film cover. PAM is used as a fixative for the particulate. The quantity of PAM used is based on a fixative. The particles control vapor transfer. The particles overlap on the soil.

In the present invention, the soil stabilizer is released to the soil. The quantity of soil stabilizer used is based on soil loading. The soil carrier serves as a delivery system. The soil stabilizer is metered to the soil as the solid carrier is metered to the soil.

As stated in JP7-57, the prior art described relates to poly film, other film, stone, or rice plant straw. These are all traditional cover products used for moisture management for trees. The stated object of the invention of JP7-57 is to control moisture vaporizing of soil around trees by using artificial particulate mulching material.

The product described by the JP7-57 reference is applied thick enough to the soil to control vaporizing of soil water, and to hold down the growth of weeds. The reference teaches overlapping of particles of product to achieve these results. The thickness of the layer is described as being 7 mm thick.

The JP7-57 reference specifically teaches the use of PAM as a fixative for the product particulate. It does not teach or make obvious that PAM is released to the soil, that PAM provides benefits to the soil, or does it teach the precision application of PAM. Therefore, amended claim 1 is not anticipated or obvious over JP7-57. Further the thickness of particulate mulching material does not relate to the application rates of solid carrier to soil based on desired amount of soil stabilizer to be metered to the soil.

For the reasons stated above for claim 1, claims 16, 17 and 20-22 are not anticipated or obvious over JP7-57.

As to Claim 2, JP7-57 further discloses the amount of soil stabilizer, PAM, metered to soil controlled by rate of the solid carrier metered to the soil (from "predetermined thickness of particulate mulching material" from para 0013 of translation in English).

Claim 2 has been canceled.

As to claim 3, JP7-57 further discloses a convention means (from "laid" from para 0013 of translation in English).

For the reasons stated above for claim 1, claim 3 is not anticipated or obvious over JP7-57.

As to claim 6, JP7-57 further discloses adding fertilizer (from para 0012 of translation in English).

For the reasons stated above for claim 1, claim 6 is not anticipated or obvious over JP7-57.

As to Claim 11, JP7-57 further discloses the soil stabilizer being less than 50% of the total weight (from para 0011 of translation in English).

For the reasons stated above for claim 1, claim 11 is not anticipated or obvious over JP7-57.

As to claim 12, JP7-57 further discloses a dry granular form (from title of abstract in English from Derwent).

For the reasons stated above for claim 1, claim 12 is not anticipated or obvious over JP 7-57.

As to claim 13, JP7-57 further discloses the stabilizer as a fertilizer (para. 0011 of translation in English with "bentonite" being a fertilizer).

For the reasons stated above for claim 1, claim 13 is not anticipated or obvious over JP 7-57.

Claims 4 and 5 are rejected under 35 USC 103(a) as being unpatentable over JP7-57.

As to claims 4 and 5, the limitations of claim 1 are disclosed as described above. Not disclosed is the water from rain or the user. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of JP7-57 by having the watering from rain or the user depending upon whether a pot with a plant is placed inside or outside.

For the reasons stated above for claim 1, claims 4 and 5 are not anticipated or obvious over JP7-57.

Claims 7-10, 14, 18, and 19 are rejected under 35 USC 103 as being unpatentable over JP7-57 in view of Hamilton Jr. (U.S. 4,456,733).

As to claims 7-9, the limitations of claim 1 are disclosed as described above. Not disclosed is the carrier made of fibrous material and addling seed and pesticides. Hamilton Jr., however, discloses making a granular mulch from a fibrous material for the solid carrier ("paper" of col. 3, lines 26-33) and addling seed (col. 3, lines 35-43) and pesticide (within the ambit of "other optional additives" of col. 3, lines 3543) to the solid carrier. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of JP7-57 by using a fibrous material as the solid carrier and adding seed and pesticides as disclosed by Hamilton, Jr. so as to having a mulching material that disintegrates over time and to supply a healthy plant cover to soil.

For the reasons stated above for claim 1, claims 7-9 are not obvious over JP7-57 in view of Hamilton.

As to claim 10, the limitations of claim 1 are disclosed as described above. Not disclosed is a solid carrier being an agglomerate. Hamilton, Jr. however, further disclosed the solid carrier being an agglomerate. Hamilton Jr., however, further disclosed the solid carrier made by an agglomerate by extrusion (inherent in "pelletizaiton" of col. 4, lines 14-18; extrusion is a pressure agglomeration) that are an agglomerate, or pellets (col. 2, lines 29-34). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of JP7-57 by using a fibrous material that is an agglomerate as the solid carrier and adding seed and pesticides as disclosed by Hamilton Jr. so as to have a granular mulch that can be easily stored and transported.

For the reasons stated above for claim 1, claim 10 is not obvious over JP 7-57 in view of Hamilton.

As to claim 14, JP7-57 as modified by Hamilton Jr. further discloses adding a disease-causing microbe in the solid carrier (within the ambit of "other optional additives" of col. 3, liens 35-43 of Hamilton Jr.)

For the reasons stated above for claim 1, claim 14 is not obvious over JP7-57 in view of Hamilton.

As to claims 18 and 19, the limitation of claim 1 are disclosed as described above. Not disclosed is a solid carrier being a material from paper manufacturing with previous treated ingredient that has soil stabilizing properties. Hamilton, Jr., however, further discloses a solid carrier being a material from paper manufacturing ("newsprint" of col. 3, lines 26-33) with a previous treated ingredient that has soil stabilizing properties ("binding material" of col. 3 lines 26-33). IT would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of JP7-47 by using as the solid carrier a material from paper manufacturing with a previous treated ingredient that has a soil stabilizing properties as disclosed by Hamilton Jr. so as to find a use, that is recycle newsprint.

For the reasons stated above for claim 1, claims 18 and 19 are not obvious over JP7-57 in view of Hamilton.

Claim 15 is rejected under 35 USC 103(a) as being unpatentable over JP7-57 in view of Fersch (US 5,380,350).

As to claim 15, the limitations of claim 1 are disclosed as described above. Not disclosed is the carrier with calcium oxide. Fersch, however, discloses a carrier with calcium oxide ("lime" of col. 3, line 61 of Fersch). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of JP7-57, by adding calcium oxide as disclosed by Fersch so as to have an absorptive solid carrier.

For the reasons stated above for claim 1, claim 15 is not obvious over JP7-57 in view of Fersch.

Claims 24, 25, 28-60 are rejected under 35 USC 103(a) as being unpatentable over JP7-57 in view of JP8-80127.

As to claims 24, JP7-57 discloses a method of applying PAM ("polyacrylamide" of para 0005 of abstract in English) with a solid carrier (for example, para 0011 of translation in English with a carrier being "bentonite") to the soil (inherent when watered). Not disclosed is the PAM being cross-linked, to the soil as a mulch (para. "constitution" of the translation in English). IT would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of JP7-57 by using anionic polyacrylamide as disclosed by JP8-80127 so as to stabilize soil structure.

Claim 24 has been canceled.

As to claim 25, the limitations of claim 16 are disclosed and described above. Not disclosed is the PAM being anionic. JP8-80127, however, discloses using anionic polyacrylamide, which is cross-linked, to the soil as a mulch (para. "constitution" of translation in English). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of JP7-57 by using anionic polyacrylamide as disclosed by JP8-80157 so as to stabilize soil substrate.

For the reasons described above for claim 1, claim 25 is not obvious over JP7-57 in view of JP8-80127.

As to claim 28, the limitation of claim 1 are disclosed and described above. Not disclosed is the stabilizer reducing the need for erosion mats. JP8-80127 however, discloses the mulch composition on a hillside (Figs. 1-3). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of JP7-57 by using on a hillside as disclosed by JP8-80127 so as to stabilize soil structure using a cheaper more mobile system.

For the reasons described above for claim 1, claim 28 is not obvious over JP7-57 in view of JP8-80127.

As to claims 29-36, JP7-57 as modified by JP8-80127 further disclose PAM increasing permeability, infiltration rate, tillability, and absorption of water of soil, and reduces packing rilling, crusting of the soil (inherent in use of anionic PAM on the soil).

For the reasons described above for claim 1, claims 29-36 are not obvious over JP7-57 in view of JP8-80127.

As to claims 37-42, JP7-57 as modified by JP8-80127 further disclose the PAM reducing leaching and runoff of fertilizer, which would lower fertilizer costs, in the soil (inherent in use of anionic PAM on the soil).

For the reasons described above for claim 1, claims 37-42 are not obvious over JP7-57 in view of JP8-80127.

As to claims 43-45, JP7-57 as modified by JP8-80127 further disclose reduced runoff and leaching of microbes, including fecal bacteria, and pesticides from the soil (inherent in use of anionic PAM on the soil).

For the reasons described above for claim 1, claims 43-45 are not obvious over JP7-57 in view of JP8-80127.

As to claim 46, JP7-57 as modified by JP8-80127 further disclose increasing particle size (inherent in use of anionic PAM on the soil).

For the reasons described above for claim 1, claim 46 is not obvious over JP7-57 in view of JP8-80127.

As to claims 47-57, JP7-57 as modified by JP8-80127 further disclose improving plant growth in many aspects and reduces soil-borne diseases (inherent in use of anionic PAM on the soil).

For the reasons described above for claim 1, claims 47-57 are not obvious over JP7-57 in view of JP8-80127.

As to claims 58-60, JP7-57 discloses a method of applying a soil stabilizer, PAM ("polyacrylamide" of para. 0005 of abstract in English), comprising adding a soil stabilizer to a solid carrier (for example, para. 0011 of translation in English with carrier being 'bentonite") applying the solid carrier to the soil (for example, para. 0013 of abstract in English) by conventional application equipment (any method of para. 0013 would use conventional equipment). Not disclosed is adding water to the soil carrier. JP8-80127, however, discloses adding water to a PAM mulch ("pure water" of para. 0023). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of JP7-57 by adding water as disclosed by JP8-80127 so as to be able to apply as a slurry so as to apply as a hydromulch.

Applicant has amended claims 58-60 to state that the solid carrier is applied to the soil in a dry state. The examiner states that JP7-57 in view of JP8-80127 teaches a hydromulch. Therefore amended claims 58-60 are not obvious over JP7-57 in view of JP8-80127.

Applicant believes the application is in condition for allowance.

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Comparative Analysis

21-Nov-05

	JP7-57	JP7-57 References	ENCAP	ENCAP References
Overview				
Title	Artificial Particulate Mulching Material (for planting rees)	*"For planting trees was provided in the 10/05/2004, East Version:1.4.1 states in the title"for planting trees".*	PAM Carrier	*Not Applicable*
Definitions provided in Spec for "Mulching Material"	The prior art "mulching material" this patent compares itself to, and claims to improve upon, is described as poly film, other film, stone, or rice plant straw. All traditional "cover" products used by people knowledgeable in the art of moisture management for trees.	*(0002) lines 1 "When technology regarding conventional mulching material…"; (0002) line 2-3 "first, there is a poly vinyl chloride film or other film"; (0002) line 17 "this being something which lays stone"; (0002) lines 26-27 "rice plant straw"; (0003) first paragraph compares prior mulching material to new mulching material*	Not Applicable	*Not Applicable*
Type of Claims Made	Product Claims	*Not applicable*	Method Claims	*Not Applicable*
Patentable Invention				
Objective	To control moisture vaporizing of soil around trees by using artificial particulate mulching material.	*(0001) "As for objective of this invention, in order to control the moisture vaporizing of the soil mainly…". The 10/05/2004, East Version:1.4.1 states in the title"for planting trees"". The same version also states in the Title-Terms "plant trees". The same version states the Use to be "Used in tree-planting industries for streets, parks, and gardens. Section(0001) in the Field of Industrial Application says it again in the last paragraph "roadside tree". Further more, throughout the body, where the intended use is described, the patent refers to the translated word "plant". In addition, "plant" is always used as a singular tense, never plural tense.*	To deliver PAM to the soil by use of a carrier	*Page 15 (Summary of the Invention): "The present invention relates to a method for applying PAM to soil wherein PAM is precisely intermixed, impregnated and/or applied to solid carriers.*
Prior Art	To accomplish the stated objective, conventional products used as "mulching material" are explained to by poly vinyl chloride film, rake mulch (stone), and rice plant straw. The performance benefits of these is a result of the layer they create. The rake mulch is explained to hold down weed growth.	*See "Definition Provided for Mulching Material in spec" entry above*	To accomplish the stated objective, conventional methods included application of PAM to soil by use of water (as a carrier), or in its raw granular form with a spreading devise.	*Page 2 (Third paragraph): "PAM's three most common forms are dry granules, solid blocks (cubes) and emulsified liquids. The application method of PAM chosen depends on the form of PAM selected…".*
Purpose	Products used in prior art were expensive. The desire was to accomplish the stated objective with a new, less expensive material.	*(0001) "As for objective of this invention, in order to control the moisture vaporizing of the soil mainly…"*	PAM is difficult to apply to soil. The desire is to provide a new convenient method of metering PAM to soil.	*Page 3 (Second paragraph): "There are many known problems for applying PAM to the soil using present applications…"*
USE OF PRODUCT				
What is taught about the particles of the product?	Products are applied thick enough to soil to control vaporizing of soil water, hold down growth of weeds,	*By reference, prior art presented creates a cover. Examples provided teach application rate resulting in total (100%) coverage of soil*	Product material is used as a carrier and delivery system for metering PAM to the soil.	*Page 15 (Second paragraph): "The solid carrier acts as a delivery system for the PAM. By controlling the rate of solid carrier metered to the soil, you in turn, control the amount of PAM metered to the soil".*
Does it teach overlapping particles of product (a layer) is required to achieve results?	Yes	*(0013) lines 13, 20-21 "a predetermined thickness of particulate mulching material…mulching material is 5mm…laid…at a thickness of 7mm, it is laid in uniform thickness"; example 3:"particle diameter of 5mm, this is laid…in a thickenss of 7mm"; example 4 "average particle diameter 5mm...it lays particulate mulching material in thickness of 7mm"*	No	*Page 22 (Second paragraph): "The product was applied at a rate of 50lbs/1000 sq.ft. Nothing in the body teaches the need to create overlapping particles to form a layer, as it is not required.*
What application rates does it teach	Uniform thickness layer of 7mm (5mm particle size)	*See above*	Fertilizer-like application rate	*See Above*
Does it teach that product particles affect vapor transfer?	Yes	*See above three explanations*	No	*Not Applicable*
Does application rate of the product particles affect vapor transfer?	Yes	*It only teaches the performance of a soil covering type material to give desired results. See above four explanations.*	No	*Not Applicable*
USE OF PAM				
What is taught about PAM?	Include the amount required to form the granules of the product particulate	*(0005) lines 2-3 "…decided to use water solubility organic polymer compound as fixative between the particles"; (lines 6-8 "…polyacrylamide… is effective as the fixative"*	Include the amount that is to be delivered to the soil for desired peformance results within the soil.	*Page 15 (Last paragraph): The present invention relates to adding PAM to a solid carrier, applying the solid carrier to the soil;applying water to the solid carrier;and leaching PAM out of the solid carrier into the soil."*
Does it teach PAM as fixative for the product particulate?	Yes	*See "What is taught about PAM?" above*	No	*Not Applicable*
Does it teach PAM is released to the soil?	No	*Not applicable*	Yes	*See above "What is taught about PAM?"*
Does it teach PAM as having benefits to the soil environment?	No	*Not applicable*	Yes	*Page 1 (Paragraph 3): "Since the late 1980's there has been renewed interest in the use of water soluble polymers for soil physical improvement. Although PAM has been used for soil structure improvement since the 1940's and in agriculture since the 1950's..."*
Does it teach the difficulty of applying PAM to the soil?	No	*Not applicable*	Yes	*See above "Purpose"*
Does it teach precision application?	No	*Not applicable*	Yes	*Page 15 (paragraph 2): "…By controlling the rate of solid carrier metered to the soil, you in turn, control the amount of PAM metered to the soil."*
Does given prior art reference PAM?	No	*Not applicable*	Yes	*All stated references refer to PAM*

What do they Teach?

21-Nov-05

	JP7-57	ENCAP
PAM in product	✓	✓
Product Claims	✓	
Field of application is tree planting	✓	
Product is better than poly film cover	✓	
PAM as fixative to product particulate	✓	
Qty of PAM used based on fixative	✓	
Particles control vapor transfer	✓	
Prior art used as weed control	✓	
Particles overlap on soil	✓	
Method Claims		✓
Method is better applicator than water		✓
PAM released to soil		✓
Qty of PAM used based on soil loading		✓
PAM offers soil benefits		✓
PAM is difficult to apply to soil		✓
Particles serve as PAM delivery system		✓
PAM is metered to the soil		✓
Particles are metered to the soil		✓